STATEMENT OF

EDWARD R. HAMBERGER

PRESIDENT & CHIEF EXECUTIVE OFFICER

ASSOCIATION OF AMERICAN RAILROADS

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SUBCOMMITTEE ON RAILROADS

HEARING ON FATIGUE AND THE HOURS OF SERVICE ACT

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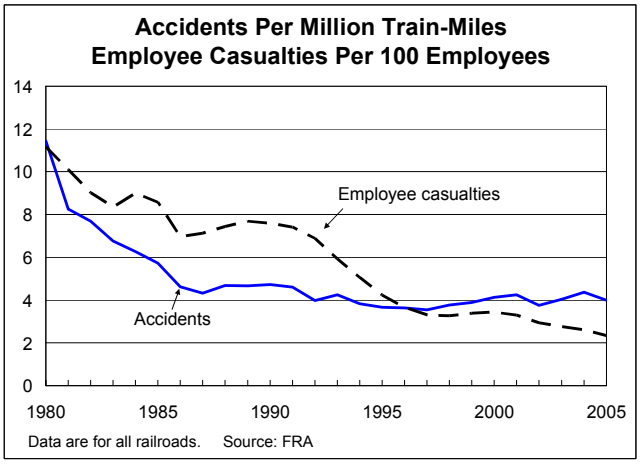
Introduction

On behalf of the members of the Association of American Railroads (AAR), thank you for the opportunity to discuss issues surrounding rail safety, the Hours of Service Act, and fatigue in the rail industry. AAR members account for the vast majority of freight railroad mileage, employees, and traffic in Canada, Mexico, and the United States.

The overall railroad industry safety record is excellent, reflecting the extraordinary importance railroads place on safety. Since 1980, railroads reduced their overall train accident rate by 65 percent and their rate of employee casualties by 79 percent. In 2005, in fact, the employee casualty rate was the lowest in history. Railroads have lower employee injury rates than other modes of transportation and most other major industry groups, including agriculture, construction, manufacturing, and private industry as a whole. U.S. railroads also have employee injury rates well below those of most major European railroads. And when they do happen, railroad injuries are no more severe than injuries in U.S. industry as a whole.



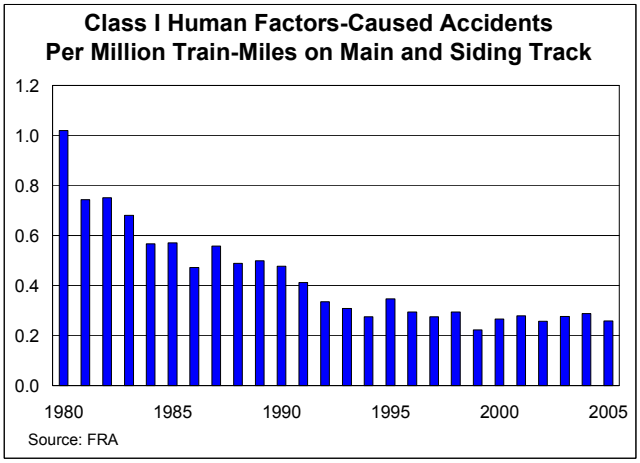
Railroads are also far safer than trucks. Rail freight transportation incurs less than one-fifth the fatalities that intercity motor carriers do per billion ton-miles of freight moved.

Background on Rail Accidents Caused by Human Factors

According to Federal Railroad Administration (FRA) data, human factors (*i.e.*, human errors) constitute the largest category of train accidents, accounting for 38 percent of all train accidents from 2001 to 2005.

Given the extent and complexity of rail operations — the railroad "factory floor" is outdoors and more than 140,000 miles long — the potential for rail accidents always exists. And while railroads respect and applaud the professionalism and attention to safety that rail employees bring every day to their jobs, people may sometimes make mistakes.

Over the past decade, the rate of rail accidents caused by human factors has stayed relatively constant, and in 2005 was 53 percent lower than it was in 1980. In addition, many human factor-caused accidents are low-speed yard accidents, which incur substantially lower damage and casualties. The rate of human factors-caused accidents involving freight trains on main and siding track in 2005 was 75 percent below its 1980 level and 46 percent below its level in 1990. Because of the more standardized work environment in yards and terminals, fatigue issues come into play most predominantly on mainline, long-distance trains. However, safety data indicate that the human factors-related accident rate (which include accidents caused by fatigue) on main lines has greatly improved.



Nevertheless, railroads agree that they, rail labor, and the FRA must continue to try to reduce the frequency of accidents caused by human factors.

Background on the Hours of Service Act

As members of this committee know, the on-duty time of rail employees involved in operating, dispatching, and signaling trains is governed by statute — specifically, the Hours of Service Act (HSA), now codified as 49 U.S.C. 21101-21108.

Under the HSA, rail employees that operate trains (*i.e.*, conductors and engineers) must go off duty after 12 consecutive hours on the job, and then must have at least 10 consecutive hours off duty. If they go off duty after less than 12 hours on the job, they must have at least 8 consecutive hours off duty. On-duty time starts the minute the employee reports for duty and includes any work that involves engaging in the movement of a train and deadhead transportation to a duty assignment. Off-duty time starts when the employee is released from duty, generally at a designated terminal or place of lodging. For dispatchers, a workday is limited to nine hours in a 24-hour period where two shifts are used, or 12 hours over the same period when there is only one shift. Finally, signal employees can work a maximum of 12 consecutive hours on duty, followed by at least 10 consecutive hours off duty.

Railroads must keep detailed records specifying when each covered employee is on duty or off duty. Violations of the HSA can result in fines of between $500 and $10,000 per violation, with each employee considered a separate violation.

To comply with the HSA and still operate as a highly-competitive 24-hours per day, 7-days per week industry, freight railroads try to schedule crew assignments with as much precision as possible. Unfortunately, the nature of rail operations makes precision extremely difficult to achieve.

Most people are familiar with passenger modes of transportation, and that familiarity at times slants our thinking about how freight railroads do and should operate. A single flight crew, for example, will typically fly a plane from, say, Los Angeles to Washington. Occasionally, weather or other problems might impact airline schedules, but by and large passenger airlines are able to offer predictable, regularly-scheduled service.

Generally speaking, freight railroads are quite different. Unlike airlines, freight railroading requires multiple crew changes to move commodities across the country. Rail-

roads must use multiple local and yard assignments to gather freight at the beginning of its trip, then use multiple crews to move it across the country, and then use more local crews to deliver the freight to its final destination.

Where appropriate and practicable, train scheduling is being implemented and can have positive impacts on fatigue. However, because of the nature of some rail systems, trains in many cases cannot run on a precise schedule.

There are numerous reasons for this. For example, railroads are a derived demand industry: they move traffic that is tendered to them, and the volume of traffic tendered is influenced by a huge variety of factors — *e.g.*, the state of the general economy, customer operating and delivery cycles, conditions in specific industries, and the time of year. These factors mean that the volume of rail traffic on the U.S. rail network on one day of the year can vary by tens of thousands of carloads and intermodal units compared to another day.

These variances are driven by myriad external market forces over which railroads have no control, such as the arrival (and severity) of summer weather (and increased demand for coal to fuel power plants); the size and timing of grain and other agricultural harvests; the approach of Christmas season when retailers are stocking their inventories; factory ramp-ups and temporary shutdowns; ocean vessel arrivals and departures; the status of export markets for coal, grain, and other products; and even interest rates, which affect sales volumes of automobiles and home building material, among many other things.

These variances mean that a different number of trains must be operated from one time period to the next, which in turn impacts the number of crews needed.

In addition to carload variances, weather conditions, track maintenance, accidents, track congestion, and dozens of other events or circumstances can delay a particular train's progress, thus impacting the time that crews down the line will be needed. For example, when

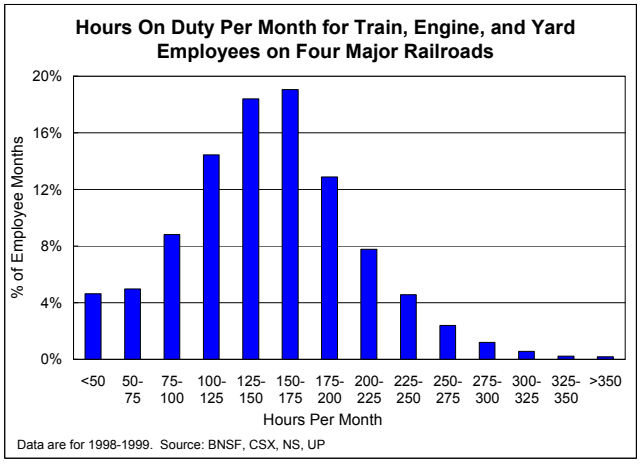
a motor vehicle goes around crossing gates and is hit by a train, not only does that train stop for several hours, but all trains behind it are delayed as well. Crews at the next terminal are unexpectedly delayed in terms of when they go to work.

Thus, there is considerable volatility in railroad crew needs on a daily, weekly, and monthly basis. Indeed, there is probably no other industry with scheduling volatility as pronounced as freight railroading.

Additionally, the existing hours-of-service regime is embedded in many existing collective bargaining agreements, including provisions on crew calling and pay scales.

Crew calling is the procedure by which engineers and conductors are required to be available for duty and are called to report for duty. Railroads try to provide employees as much advance notification as is practical, but, again, the nature of rail operations and the fact that most rail operating employees bid into a seniority-based pool system from which they are drawn in a complex rotating order makes precise scheduling impossible to achieve. This pool system is part of the collective bargaining agreement between rail management and rail labor.

Some have pointed out that a rail employee could work 432 hours per month and still be in compliance with the HSA. Theoretically, that's true, but there is a huge difference between theory and practice, and in fact we know of no cases where this has occurred. As the chart on the right shows, the overwhelming majority of railroad train, engine, and yard employees are on duty each month for periods comparable to most other U.S. workers. Some 83 percent of these rail workers are on duty less than 200 hours per month, more than 95 percent are on duty



less than 250 hours per month, and more than 99 percent are on duty less than 300 hours per month.[1]

Of course, on duty time does not equate to time actually operating a train, which is typically much less. For example, under the statute and FRA interpretations, "on duty" time can include activities such as attending a safety briefing after leaving a train, being transported to and from trains, and making computer entries. Time spent on these activities is treated the same way as time spent running a train.

Railroads believe that a recent study of crews operating in the busy Western coal fields in 2004-2005 reveals what rail employees typically face in terms of hours worked. The study of more than 11,000 crew starts by 150 employees during a 10-month period found that the average time on duty was 9.5 hours with an average of 25 hours off duty between trips.

Fatigue in the Rail Industry

It is clearly not in the best interest of railroads to have employees who are too tired to perform their duties properly. That's why railroads have long partnered with their employees to gain a better understanding of fatigue-related issues and find effective, innovative solutions to fatigue-related problems. However, because factors that can result in fatigue are multiple, complex and frequently intertwined, there is no single solution.

Scientific research to date suggests that flexibility to tailor fatigue management efforts to address local circumstances is key to the success of these programs. Significant variations associated with local operations (*e.g.*, types of trains, traffic balance, and geography), local labor agreements, and other factors require customized measures. Consequently, a one-size-

[1] The data referenced in this paragraph cover 1998-1999. Recent analysis reveals that the average hours worked per year for train and engine employees have increased only slightly between 1998-1999 and 2005. Thus, the relationships noted above are believed to be valid today.

fits-all government approach is unlikely to succeed as well as cooperative efforts tailored to individual railroads.

Railroads recognize that combating fatigue is a shared responsibility. Employers need to provide an environment that allows the employee to obtain necessary rest during off-duty hours, and employees must set aside time when off duty to obtain the rest they need.

Since 1992, the AAR, the Brotherhood of Locomotive Engineers, and the United Transportation Union have addressed fatigue through the Work/Rest Task Force. The Task Force members share information about fatigue countermeasures. Periodically, the Task Force publishes a compendium of railroad initiatives. A revised compendium is currently being prepared.

Different railroads employ different fatigue countermeasures, or the same counter-measures in different ways, based on what they've found to be most effective. A list of countermeasures — at least some of which can be found on every major railroad — includes:

- Increasing the *minimum number of hours of rest* at both home and away from home terminals.
- Implementing a *morning return* to work time if off work over 72 hours.
- Evaluation of a system to *identify relative levels of fatigue* in different locations using a work schedule model.
- Evaluation and adoption of a sophisticated *fatigue modeling computer program* that allows users to vary shift lengths, duration of off-duty time, and the like to determine which set of variables is likely to induce the least amount of fatigue at a particular location. Employees and their labor representatives at several locations have been given a copy of the model and training in its use in order to test prospective countermeasures from the perspective of fatigue and lifestyle.
- Fatigue identification and avoidance *training information* for employees and families.
- Permitting *napping* by train crew members under limited circumstances (*e.g.*, when a train is expected to remain motionless for a minimum period of time)
- *Sleep disorder screening.* Recognizing that some employees with sleep disorders may be reluctant to come forward for treatment for fear of their livelihood, in 2005 railroads and labor produced and circulated a statement

saying that a sleep disorder will be addressed no differently than any other medical condition that might affect job performance — namely, individual evaluation by medical professionals for diagnosis and treatment.

- *Improved standards* for lodging at away-from-home facilities that provide black out curtains, white noise, and increased sound proofing.
- Railroads have devised a number of systems, including web sites and automated telephone systems, to *improve communication* between crew callers and employees. Union Pacific, for example, has developed a customized notification process allowing employees to specify how (cell phone, text message, e-mail) they want to be notified. They can also specify "when" to be notified — *i.e.*, when the number of employees "ahead" of them drops to a level that the employee specifies.

Railroads and unions have agreed in some cases to additional scheduling tools where such tools are feasible and will provide for an improved opportunity for rest. They include:

- Enhanced emphasis on *returning crews home* rather than lodging them away from home. Canadian National, for example, uses this practice for many of its road train crews.
- Providing more predictable *calling windows* and rest opportunities between shifts. For example, a significant number of Norfolk Southern crews know within a narrow window when their next assignment will begin.
- Providing for a *set number of days off* after being available for a given number of days. For example, at some 200 crew locations covering thousands of employees, BNSF has implemented a scheduling policy that provides three set days off after seven days of work. These provisions required local union agreements at the various locations and were implemented with union agreement and participation.
- Allowing employees to request an *extra rest period* when they report off duty.

In addition, all AAR member railroads offer fatigue education programs for employees and their families, including individualized coaching to assist employees in improving their sleep habits.

The importance of education in this area cannot be overstated, since the value of fatigue-related initiatives is highly dependent upon the actions of employees while off duty. The most important time frame that affects fatigue on the job are the hours prior to going on

duty. Employees must make proper choices regarding how they utilize their off-duty time, and education of the entire family is important in encouraging sound decision making.

An educational web site designed solely for railroads and rail employees is under development by the Class I railroads in partnership with the American Short Line and Regional Railroad Association and the American Public Transportation Association. The site is scheduled to go on line later this year. The purpose of this tool is to provide general information to employees about alertness and to identify possible sleep disorders. The site will include a self-assessment tool and an explanatory letter about sleep disorders that employees can take to their physicians.

Another part of the web site will include existing educational programs (videos, pamphlets, etc.) that subscribers can exchange. An expert scientific panel has been formed to review content. The panel includes:

- Dr. Greg Belenky, Director of the Sleep and Performance Research Center at Washington State University Spokane.
- Dr. Simon Folkard, Emeritus Professor, Department of Psychology, University of Wales Swansea
- Dr. Stephen Popkin, Division Chief, Operator Performance and Human Safety Analysis, Volpe National Transportation Systems Center

The FRA also is addressing work/rest issues. For example, it is attempting to develop a fatigue model that could be used to improve crew scheduling. Railroads are cooperating in this project by supplying work-schedule data for their employees. If successful, the model might be used to improve scheduling practices based on aggregate data. The FRA is also investigating, with railroad cooperation, the use of wristwatch-like devices known as "actigraphs" to help measure the effect of schedules and educational efforts on sleep patterns.

It is important to remember that there is no single solution to the issue of fatigue. It must be, and is being, attacked on multiple fronts. Railroads agree with the NTSB that it is a

"…shared responsibility of the carrier to provide an employee the opportunity for adequate sleep and of the employee to acquire sleep sufficient to work at a safe level of alertness…"

What Should (and Should Not) Be Done

As detailed above, railroads are heavily involved in efforts to better understand and combat fatigue in the workplace, and have made many advances within the current framework of the HSA. They favor continued research on the subject and will continue to work with rail labor to find and implement new ways to combat fatigue. However, railroads urge extreme caution in amending the HSA.

New fatigue-related regulatory or statutory mandates are inappropriate because workplace fatigue issues are ill-suited to resolution in this way for a variety of reasons.

First, a single set of mandates cannot take into account the widely varying circumstances found on individual railroads. For example, operating characteristics vary widely between freight, intercity passenger, and commuter railroads, and within railroads in each of these categories.

Second, collectively-bargained labor agreements must be taken into account when addressing fatigue. Labor agreements commonly include provisions governing seniority, income, methods of calling crews to duty, and other matters that impact how often particular employees work. These agreements differ from one locale to another.

Moreover, rail operating crew pay scales typically reflect pay premiums for work beyond specified thresholds. This is why rail unions have traditionally resisted modifications to the HSA which would limit the freedom of their members, if they so choose, to maximize hours worked (within the limits of the HSA) and thereby maximize earnings.

The conflict between collectively-bargained agreements and government regulation is exemplified by the case of railroad signal employees, who install and maintain signal systems that direct the movement of trains. To enable signal employees to finish their work at far-away sites without having to commute multiple times, railroads and signal employees historically have agreed to work schedules of eight consecutive work days (ten hours each day, not including extended work days in emergency situations) followed by six consecutive days off. Although these work schedules are permitted under the HSA and would result in much less total off-duty travel time for employees working a substantial distance from home, they are not permitted by Federal Motor Carrier Safety Administration (FMCSA) hours-of-service regulations, which apply to the many railroad signal employees who drive commercial vehicles to perform their duties.

For several years, railroads and rail labor (through the Brotherhood of Railroad Signalmen) have petitioned FMCSA to allow the Congressionally-imposed requirements of the HSA to take precedence over FMCSA's hours of service requirements. To date, FMCSA has refused. Railroads respectively urge members of this committee to encourage FMCSA to accede to this reasonable request.[2]

Third, regulations could stifle needed innovation. Rail labor and management are constantly gaining knowledge in the area of fatigue, especially practical experience from projects they have begun. Flexibility is needed to facilitate new projects and changes in existing ones, but regulations could "lock in" procedures and preclude innovations.

[2] I testified on this issue to this committee on June 22, 2000. On August 21, 2001, Chairman Don Young, Chairman Jack Quinn, and Ranking Democratic Member Bob Clement wrote to Secretary Mineta asking him to require that the FMCSA's hours of service requirements not apply to railroad signal employees.

Fourth, nonproductive work/rest rules could impair the railroads' ability to provide efficient, cost-effective service to their customers. Unproductive regulations could hinder rail service without improving safety.

Train Control Technology

Technology has long played a critical role in improving rail safety. Moving forward, railroads are looking to technological advances to reduce the incidence of human-factors caused accidents, including accidents caused by fatigue.

For example, several major railroads are now developing and testing train control systems that can prevent accidents by automatically stopping or slowing trains before they encounter a dangerous situation. Through predictive enforcement, train control technologies, in certain circumstances, could significantly reduce the incidence of train accidents caused by human error, especially train collisions and derailments due to excessive speed.

Train control systems are extremely complex. At a minimum, they must include reliable technology to inform dispatchers and operators of a train's precise location; a means to warn operators of actual or potential problems (*e.g.*, excessive speed); and a means to take action, if necessary, independent of the train operator (*e.g.*, stop a train before it reaches the physical limits of its operating authority). Some systems will also include additional features, such as expanding the ability to monitor the position of hand-operated switches. Perhaps the most critical element is sophisticated software capable of accommodating all of the variables associated with rail operations. When successfully implemented, these enhanced train control capabilities will enable trains to operate more safely than trains operate today.

Several major railroads are engaged in various projects to test elements of this new technology. For example, BNSF has done extensive and successful pilot testing in Illinois and has received approval from the FRA to expand its version of train control (Electronic Train

Management System – ETMS) on a second rail corridor between Texas and Kansas. The railroad is awaiting final approval from the FRA on the technology in order to implement it on lines throughout its system.

Additionally, there are train control projects in progress on other railroads which promise to provide similar or further enhanced functionality and safety benefits. These include CSX's Communications-Based Train Management (CBTM) system, Norfolk Southern's Optimized Train Control (OTC) system, and Union Pacific's Communications-Based Train Control (CBTC) system.

Implementing train control technology will require significant capital investments in wireless networks; sophisticated location determination systems; highly reliable software; and digital processors on board locomotives, in dispatching offices and, for some systems, along tracks. The major railroads that intend to install train control systems will use any related productivity gains to help offset their cost, thereby accelerating implementation.

Conclusion

Railroads' commitment to safety is absolute. Indeed, through massive investments in safety-enhancing infrastructure and technology; employee training; cooperative efforts with labor, suppliers, customers, communities, and the FRA; cutting-edge research and development; and steadfast commitment to applicable laws and regulations, railroads are at the forefront of advancing safety.

Combating fatigue is a shared responsibility. Railroads recognize that they must ensure that employees have sufficient opportunity to rest. For their part, employees are responsible for using a sufficient amount of the time made available to them for rest. No

legislative, regulatory, or corporate measure can make employees devote their time to any particular activity.

Railroads and their employees are best able to design tailored fatigue countermeasures to match particular situations. Blanket statutory or regulatory requirements under the guise of fatigue management could undercut the cooperative efforts of rail labor and management by eliminating the flexibility necessary to test and implement custom-tailored, effective fatigue management programs.